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ABSTRACT

Although research has shown that regularly engaging in vigorous activity has both physical and mental benefits, including a more positive evaluation of one's own body, the multidimensional nature of people's body attitudes has not been considered. The Body Esteem Scale (BES) was developed to identify and assess different body esteem dimensions. Three subscales for women measure sexual attractiveness, weight concerns, and physical condition. Adult females (n=24), ranging in age from 25 to 47 and enrolled in a 12-week aerobic exercise program, completed the Weight Concern and Physical Condition subscales of the BES at the beginning and end of the program. The results indicated that the women's attitudes toward their bodies became more positive on the physical condition dimension of body esteem but not on the weight concern dimension. These results are consistent with previous research (Franzoi and Herzog, 1986) and demonstrate the importance of using multidimensional body esteem measures when investigating the effect that exercise has on body attitudes. (NB)

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Effects of Aerobic Exercise on Female Body Esteem: A Multidimensional Approach*

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Abstract

Adult females enrolled in a twelve week aerobic exercise program completed a multidimensional body esteem measure at the beginning and end of the course. Results indicated that the women's attitudes toward their bodies became more positive on the physical condition dimension of body esteem but not on the weight concern dimension. These results are consistent with previous research (Franzoi & Herzog, 1986) and demonstrate the importance of utilizing multidimensional body esteem measures when investigating the effect exercise has on body attitudes. Results are further discussed in terms of contemporary standards of female beauty in our society.

Research has shown that regularly engaging in vigorous exercise has both physical and mental health benefits (e.g., Brownell & Stunkard, 1980; Clausen, 1976; Greist, Eischens, Klein, & Faris, 1979; Keller & Seraganian, 1984; Martin & Dubbert, 1982; McCann & Holmes, 1984; Morgan, 1981). Included within these mental health benefits is a more positive evaluation of one's own body: adults who participate in exercise programs tend to develop more positive body esteem (e.g., Collingwood & Willett, 1971; Hawkins, 1981; Sidney & Shephard, 1976). Yet the problem with past research investigating body attitude change as a result of exercise activity is that the body esteem measures employed did not take into account the multidimensional nature of people's body attitudes. Most of these studies merely asked global questions about the exercisers' body esteem using either single-item measures or attitude measures that expressed body esteem as a single score based on the sum of the individual's responses to body items (e.g., Secord & Jourard, 1953). The purpose of the present study was to use a recently developed multidimensional body esteem scale to measure changes in women's attitudes toward their bodies as a result of their participation in a twelve week aerobic exercise program.

The Body Esteem Scale

Recently, Franzoi and Shields (1984) demonstrated that when people evaluate their own bodies, they do not merely engage in global assessments (e.g., "I like or dislike my body"), but rather, evaluate their bodies in terms of distinct dimensions. The Body Esteem Scale (BES) that resulted from their factor analytic work identified three different body esteem dimensions for both males and females.[1] In females, body esteem consisted of attitudes toward sexual

attractiveness, weight concern, and physical condition. The Sexual Attractiveness subscale measures women's attitudes toward body parts and functions associated with facial attractiveness and sexuality. The Weight Concern subscale also pertains to physical appearance but measures women's attitudes toward body parts that can be physically altered through controlling food intake and body functions associated with food intake. The third subscale for women, Physical Condition, deals with women's attitudes toward their stamina, strength, and agility.

Franzoi and Herzog (1986), in a correlational study, found that the amount of aerobic exercise women engaged in per week was positively related to esteem scores on the Physical Condition subscale ($r = .46$, $p<.001$), but not significantly related to sexual attractiveness ($r = .07$) or weight concern ($r = .09$). These results can be interpreted as indicating that vigorous exercise does not result in an increase in all dimensions of body esteem, but only in those directly related to physical performance. One problem with this study, however, is that it is correlational in nature, and thus, no firm conclusions can be drawn concerning the causal direction of this relation.

In the present study, women participating in an aerobic exercise class completed the Weight Concern and Physical Condition subscales of the BES during the first week of the program and again during the twelfth week. This type of research design allowed for clearer causal conclusions if differences were found between the pre-test and post-test measures. Based on past research (Franzoi & Herzog, 1986), it was hypothesized that women's attitudes toward the body esteem

dimension of physical condition would improve as a result of exercise, but that their attitudes toward the weight concern dimension of body esteem would not demonstrate a similar improvement.[2]

Method

Participants. Twenty-four women, ranging in age from 25 to 47 ($M = 35.30$, $SD = 6.60$), participated in the study.

Questionnaire. The questionnaire consisted of the Weight Concern and Physical Condition subscales of the BES. As developed by Franzoi and Shields (1984), BES respondents rate individual body parts and functions using a 5-point Likert scale ranging from 1 (Have strong negative feelings) to 5 (Have strong positive feelings). The Weight Concern subscale contains the following body items: appetite, waist, thighs, body build, buttocks, hips, legs, figure or physique, appearance of stomach, weight. The Physical Condition subscale contains the following body items: physical stamina, reflexes, muscular strength, energy level, biceps, physical coordination, agility, health, physical condition. The BES has been shown to be factorially sound (Carpentieri & Cheek, 1985; Franzoi & Shields, 1984) and each subscale has adequate internal consistency (coefficient alphas ranging from .78 to .87). In addition, the BES subscales' convergent and discriminant validity has been adequately demonstrated (Franzoi & Herzog, 1986; Franzoi & Shields, 1984). In addition to the two BES subscales, the questionnaire also contained items asking respondents to indicate their energy level during the past week on a five-point scale (with "1" = "low" and "5" = "high"), and asking them to indicate their height, weight, and age.

Procedure. During the first class of a twelve week aerobic dance program (a one hour course, meeting three times a week with 25 minutes of stretching and strengthening exercises, 25 minutes of aerobic exercise, and 10 minutes of cool-down), beginning female exercisers were asked to participate in a study which would require them to answer questions about their body attitudes and physical capabilities. Once they agreed to participate and completed the questionnaire, they were asked to do as many push-ups as they could, and to then mark the number completed on a separate sheet. Twelve weeks later, participants again were administered the questionnaire and recorded the number of completed push-ups.

Results

Changes During the Twelve Week Program

Analysis of variance within a randomized block design (Kirk, 1968) was employed to determine differences between the pre-test and post-test measures. During the twelve week exercise program, the women reported a significant increase in their energy level (M_1 = 2.92, SD_1 = .95 and M_2 = 3.42, SD_2 = .86, $F_{1,23}$ = 5.77, $p < .05$). This self-reported energy increase manifested itself behaviorally by a significant increase in the number of push-ups the women were able to complete at the end of the 12 weeks (M_1 = 15.18, SD_1 = 4.49 and M_2 = 23.29, SD_2 = 7.40, $F_{1,15}$ = 9.42, $p < .001$).[3] These findings indicate that the aerobic exercise program was effective in delivering physical benefits to the participants.

As predicted, the exercisers' BES weight concern subscale scores did not change significantly from the beginning of the course to the end of the course (M_1 = 26.67, SD_1 = 8.38 and M_2 = 28.42, SD_2 = 9.16, $F_{1,23}$ = 2.78, ns), but their BES physical condition subscale scores did become more positive (M_1 = 29.88, SD_1 = 5.65 and M_2 = 32.25, SD_2 = 5.25, $F_{1,23}$ = 5.47, $p<.05$).

Discussion

The present study indicates that participation by women in aerobic exercise results in an increase in a specific dimension of body esteem dealing with physical condition, but no corresponding increase in a body esteem dimension dealing with weight concern. These results are consistent with correlational findings by Franzoi and Herzog (1986) which found that amount of aerobic exercise engaged in per week only appeared to influence women's physical condition dimension of body esteem.

One possible reason why physically fit women do not become more favorable in their assessments of weight-related body parts and functions as a result of increased exercise activity is that our society sets unrealistically "thin" standards for female beauty. Indeed, in a recent study of what body aspects people use in judging physical attractiveness, Franzoi and Herzog (1987) found evidence indicating that the body items comprising the weight concern subscale of the BES figured more prominently in people's judgments of female attractiveness than did body items from the other two BES subscales. Their results also indicated that women tend to evaluate their bodies more negatively when compared to men's body esteem assessments.

Bar-Tal and Saxe (1976) explain such gender differences by arguing that physical appearance is a more important factor in how people judge women's other personal qualities than it is for men. In other words, women have more to lose by not meeting societal standards of beauty because they have fewer nonphysical factors to fall back upon to raise their overall appeal. With these greater cultural pressures to meet an ideal standard, it is not surprising that actively exercising women are still dissatisfied with their bodies in terms of weight concern, even though they have more positive attitudes toward their physical condition.

In conclusion then, the present findings point out the importance of taking into account the multidimensional nature of body esteem when assessing the impact that exercise has on people's body attitudes. This study indicates that women who exercise will likely experience an increase in one dimension of body esteem specifically related to physical condition, but are unlikely to develop more positive attitudes toward other body esteem dimensions. It will be important for future researchers investigating body esteem in physically active individuals to avoid unidimensional measures of the construct so as not to arrive at erroneous conclusions concerning the benefits of exercise on body attitudes.

Footnotes

1. Since the present study dealt with female body esteem, the male body esteem dimensions are not described. For a full description of the male BES subscales the reader should refer to Franzoi and Shields (1984) and Franzoi and Herzog (1986).

2. The Sexual Attractiveness subscale of the BES was not administered to the women in the present study for two reasons: (1) the subscale contained body items that cannot be changed through exercise (nose, lips, ears, chin, appearance of eyes, cheeks/cheekbones, body hair, face, sex organs), and thus, there was no reason to believe that this dimension of body esteem would be affected by exercise activity, and (2) the researcher was concerned that the remaining items on the Sexual Attractiveness subscale (sex drive, sex activities) might result in some women not volunteering to participate due to the very personal self-disclosure required in responding to such items. The Weight Concern subscale was included even though Franzoi and Herzog (1986) found no relation between it and amount of exercise activity because body items on this subscale can be affected by exercise (e.g., waist, thighs, hips, legs, buttocks).

3. Eight of the exercisers were not included in this analysis of push-up capability due to class absence when this measure was obtained during either the first or twelfth week.

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